

Methratta

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Air Products and Chemicals, Inc.
Allentown Pa 18195
Telephone (215) 481-4911

AIR
PRODUCTS

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

MATERIAL NAME (TRADE NAME): Dimethyl Hexanediol (DH-S)
MANUFACTURER : Air Products and Chemicals, Inc. Allentown, PA 18195
CHEMICAL NAME : 2,5-dimethylhexan-2,5-diol
CHEMICAL FAMILY: Aliphatic Diol
EMERGENCY TELEPHONE NUMBERS : 1-800-523-9374
1-215-481-4911 (outside U.S.A.)
SALES & PRODUCT INFO PHONE : 1-800-345-3148
MSDS NUMBER: 3408-05 EFFECTIVE DATE: July 1988 REVISION: 05

SECTION 2: INGREDIENTS

The product is a single component solid 2,5-Dimethylhexan-2,5-diol. The CAS number is 110-03-2. Acute toxicity test results (see Section 5) and the product's low vapor pressure indicated that as an industrial chemical, Dimethyl Hexanediol (DH-S) does not require a toxic label.

A potential dust explosion hazard exists for dust clouds generated during the handling and transport of the product. Dimethyl Hexanediol can be ignited and exploded as a dispersed dust cloud at relatively low dust cloud concentrations (see Section 4).

SECTION 3: PHYSICAL DATA

BOILING POINT : 420 F
MELTING POINT : 190 F
SOLUBILITY IN WATER : 14% by weight
VAPOR PRESSURE (mm Hg) : No data
VAPOR DENSITY : Not applicable
% VOLATILE BY VOLUME : Not applicable
PH : Not applicable
SPECIFIC GRAVITY (H2O=1) : 0.898
APPEARANCE/ODOR : White, flaked solid, mild odor

SECTION 4: FIRE AND EXPLOSION DATA

FLASH POINT: The product as supplied presents no fire hazard under ambient conditions, but it will burn in a fire. It is not classified as a flammable solid according to the Department of Transportation's (DOT) definition. When melted, the product exhibits a flashpoint of

230 F and a Lower Explosion Level (LEL) of 1.5%

FLAMMABLE LIMITS (%) : Not applicable

SPECIAL FIREFIGHTING PROCEDURES: When burning, a Class A fire occurs and acrid fumes are emitted. To extinguish fires involving DH-S, use flooding amounts of water.

FIRE AND EXPLOSION HAZARD:

WARNING| EXPLOSION HAZARD. Dimethyl hexanediol (DH-S) powder or dust forms an explosive mixture in air. The relative explosion hazard of DH-S as generally supplied is classified as weak according to the Bureau of Mines ratings. However, the explosive hazard is highly dependent on particle size, and fine dust such as --420 mesh has a "strong" explosion hazard rating. The dust deflagration hazard class according to NFPA-68 for DH-S is St-2. Adequate ventilation is required to prevent dusty conditions in the workplace. Care should be taken to prevent accumulation of dust from long term usage of DH-S. Material transport systems should be electrically bonded and grounded. Processing equipment for powder should contain adequate explosion relief vents or an oxygen deficient non-flammable atmosphere.

SECTION 5: HEALTH HAZARD INFORMATION/FIRST AID

Toxicology:

- o Skin/Eye Contact Data - No data.
- o Oral LD50 (rat): >500 mg/kg
- o Dermal LD50 (rabbit): >1000 mg/kg
- o Inhalation LC50 (rat): >20 mg/l

- o Delayed, Chronic, Subchronic Test Results - No data.

Routes of Entry:

- o Ingestion
- o Skin absorption
- o Inhalation (dust)

Exposure Standards:

- o No standards established

Health Hazards:

- o Mild irritant to the eyes.
- o Sensitizer

Signs and Symptoms of Exposure:

- o Contact with the eyes or skin causes irritation and discomfort.

- o Repeated and/or prolonged contact with the skin may cause sensitization.

- o Inhalation of dust may cause respiratory irritation.

- o Due to the product's low vapor pressure, risk of exposure to hazardous concentrations of vapor under normal working conditions in a well ventilated space is minimized. However, conditions such as spraying, or sudden release of hot liquid, which generate an aerosol, mist or fog, should be avoided. Inhalation of aerosol, mist or fog may cause harm if inhaled.
- o Ingestion may cause headache, nausea and/or vomiting.

Medical Conditions Generally Aggravated by Exposure:

- o Skin disorders and allergies
- o Chronic respiratory disease, e.g., bronchitis, emphysema
- o Eye disease

FIRST AID

EYE CONTACT:

Immediately flush eyes gently with copious quantities of water for a minimum of 15 minutes. Use fingers to separate eyelids to assure that the eyes are being irrigated. Call a physician.

SKIN CONTACT:

Wash exposed skin with copious quantities of soapy water.

INHALATION:

There has been no clinical experience with overexposure via the respiratory route. If such overexposure should occur, remove patient to fresh air. If breathing is impaired, assisted respiration (e.g., mouth-to-mouth) may be indicated. Supplemental oxygen may be indicated. Seek medical advice.

INGESTION:

The consequences of ingestion in man are unknown, however, in such cases it is recommended that the stomach be emptied by induced vomiting or gastric suction. Medical advice should be obtained if ingestion has occurred.

SECTION 6: REACTIVITY DATA

STABILITY:

The product is stable under ambient conditions.

INCOMPATIBILITY:

Avoid contact of the product with oxidizing and dehydrating agents.

HAZARDOUS DECOMPOSITION PRODUCTS:

When heated to decomposition, acrid fumes are evolved. Decomposition may result in the formation of flammable acetylene gas, particularly in the presence of strong caustic solutions. Complete pyrolysis products have been identified as carbon dioxide, carbon monoxide and water. Personnel with a potential for exposure to decomposition products should wear a self-contained breathing apparatus approved by the

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National Institute for Occupational Safety and Health (NIOSH).

HAZARDOUS POLYMERIZATION:
Will not occur.

SECTION 7: SPILL, LEAK AND DISPOSAL PROCEDURES

If the material is released or spilled, wear protective clothing, boots, gloves and eye protection. Eliminate sources of ignition. Ventilate the area to disperse dust. Scoop into containers, such as 55-gallon drums, and seal for disposal. Minimize dusty conditions which create potential for explosion.

WASTE DISPOSAL:
Waste product may be disposed of in a landfill unless prohibited by local ordinance.

Waste product also may be incinerated, however, do not incinerate in closed containers.

Large quantities should be incinerated in an approved combustion system in accordance with federal, state and local regulations.

SECTION 8: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:
Respiratory protection is generally unnecessary provided there is adequate ventilation. In confined, unventilated areas, masks of the cartridge type, National Institute for Occupational Safety and Health (NIOSH) certified for organic vapors, are recommended. Avoid breathing dust. When dusty conditions prevail, a NIOSH certified combined organic vapor and dust mask should be worn. Due to the presence of silica in the surfactant, adequate ventilation to maintain product dust concentration below 10 mg/m³ (total dust) is required. General ventilation is usually adequate.

EYE PROTECTION:
Use safety glasses with side shields. Emergency eye wash facilities must be readily accessible in work areas. The product is an eye irritant. Contact lenses should not be used by person working with SURFYNOL surfactant.

BODY PROTECTION:
The wearing of long-sleeved shirts and cloth or leather gloves is recommended as a good personal hygiene practice.

SECTION 9: SPECIAL PRECAUTIONS AND HANDLING INFORMATION

HANDLING:

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MINIMIZE DUSTY CONDITIONS.
Use with adequate ventilation.

SECTION 10: ADDITIONAL INFORMATION

All components are included in the EPA Toxic Substance Control Act Chemical Substance Inventory.

H.M.I.S.

HEALTH : 1
FLAMMABILITY: 1
REACTIVITY : 0

These ratings should be used only as part of H.M.I.S. program.

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class: none.

EPA SARA Title III hazard class: none.

SARA Title III Section 313 Toxic Chemicals (40CFR372) present in this
duct above the "de minimis" limit are: none.